

Application number 09/881,226
Amendment dated January 26, 2006
Reply to office action mailed July 26, 2005

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A programmable logic integrated circuit comprising:
a programmable logic portion; and
an embedded processor portion coupled to the programmable logic portion and comprising:
a processor; and
a memory block coupled to the processor and comprising:
a memory comprising first and second pluralities of memory cells for storing data, and having a first port and a second port; and
an arbiter coupled to the first port and the second port, wherein the arbiter arbitrates access to the memory by the first port and the second port,
wherein when the second port is accessing a subset of the first plurality of memory cells, the arbiter prevents the first port from accessing the first plurality of memory cells but allows the first port to access the second plurality of memory cells, and when the second port is accessing a subset of the second plurality of memory cells, the arbiter allows the first port to access the first and second pluralities of memory cells.

Claim 2 (original) The integrated circuit of claim 1 wherein the memory is a dual-port SRAM.

Claim 3 (original) The integrated circuit of claim 2 wherein the programmable logic portion comprises a plurality of logic elements, programmably configurable to implement user-defined combinatorial or registered logic functions.

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Claim 4 (original) The integrated circuit of claim 3 wherein the programmable logic portion further comprises a plurality of horizontal and vertical interconnect lines, programmably coupled to the plurality of logic elements.

Claim 5 (original) The integrated circuit of claim 1 wherein the second port is configurable in width and depth.

Claim 6 (original) The integrated circuit of claim 1 wherein the first port and the second port are both configurable in width and depth.

Claim 7 (previously presented) A programmable logic integrated circuit comprising:

a programmable logic portion comprising a plurality of logic elements, programmably configurable to implement user-defined combinatorial or registered logic functions; and

an embedded processor portion coupled to the programmable logic portion and comprising:

a processor; and

a memory block coupled to the processor and comprising:

a first plurality of memory cells for storing data;

a second plurality of memory cells for storing data;

a first port coupled to the first and second pluralities of memory cells;

a second port coupled to the first and second pluralities of memory cells; and

an arbiter coupled to the first port and the second port,

wherein when the second port is accessing a subset of the first plurality of memory cells, the arbiter prevents the first port from accessing the first plurality of memory cells, and when the second port is accessing the subset of the first plurality of memory cells, the arbiter allows the first port to access the second plurality of memory cells.

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Claim 8 (original) The integrated circuit of claim 7 wherein the first plurality of memory cells and the second plurality of memory cells are defined by a user-programmable lock register.

Claim 9 (original) The integrated circuit of claim 8 wherein the first and second pluralities of memory cells comprise a portion of a dual-port SRAM.

Claim 10 (original) The integrated circuit of claim 9 wherein the programmable logic portion further comprises a plurality of horizontal and vertical interconnect lines, programmably coupled to the plurality of logic elements.

Claim 11 (original) The integrated circuit of claim 10 wherein the second port is configurable in width and depth.

Claim 12 (original) The integrated circuit of claim 10 wherein the first port and the second port are both configurable in width and depth.

Claims 13-45 (cancelled)

Claim 46 (previously presented) The integrated circuit of claim 7 wherein when the second port is accessing a subset of the second plurality of memory cells, the arbiter allows the first port to access the first plurality of memory cells, and when the second port is accessing the subset of the second plurality of memory cells, the arbiter allows the first port to access the second plurality of memory cells.

Claim 47 (previously presented) An integrated circuit comprising:
a programmable logic portion; and
a memory block coupled to the programmable logic portion and comprising:
a first plurality of memory cells for storing data;
a second plurality of memory cells for storing data;
a first port coupled to the first and second pluralities of memory cells;

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a second port coupled to the first and second pluralities of memory cells;
and

an arbiter coupled to the first port and the second port,
wherein when the first port is accessing a subset of the first plurality of memory cells, the arbiter prevents the second port from accessing the first plurality of memory cells and allows the second port to access the second plurality of memory cells, and
wherein the first plurality of memory cells consists of a number of memory cells and the number is configurable.

Claim 48 (previously presented) The integrated circuit of claim 47 wherein when the first port is accessing a subset of the second plurality of memory cells, the arbiter allows the second port to access the first plurality of memory cells and the second plurality of memory cells.

Claim 49 (previously presented) The integrated circuit of claim 48 wherein the programmable logic portion comprises a plurality of logic elements, programmably configurable to implement user-defined combinatorial or registered logic functions.

Claim 50 (previously presented) The integrated circuit of claim 49 further comprising:

an embedded processor portion coupled to the programmable logic portion and comprising:

a processor; and
the memory block.

Claim 51 (previously presented) The integrated circuit of claim 49 wherein the number of memory cells in the first plurality of memory cells is configurable by programming a register.

Claim 52 (previously presented) The integrated circuit of claim 49 wherein the first port and the second port are configurable in width and depth.

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Claim 53 (previously presented) The integrated circuit of claim 49
wherein the integrated circuit is a programmable logic device.